USER MANUAL

MODEL 2035
and Model 2035-25M

Parallel to Serial/
Serial to Parallel
Interface Converters

PATTON Electronics Co.

Part #07M2035-B
Doc. #102051UB
Revised 6/27/97

An ISO-9001
Certified Company

SALES OFFICE
(301) 975-1000
TECHNICAL SUPPORT
(301) 975-1007
http://www.patton.com

1.0 WARRANTY INFORMATION

Patton Electronics warrants all Model 2035 components to be free from defects, and will—at our option—repair or replace the product should it fail within one year from the first date of shipment.

This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall **Patton Electronics** be liable for any damages incurred by the use of this product. These damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. **Patton Electronics** specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

1.1 RADIO AND TV INTERFERENCE

The Model 2035 generates and uses radio frequency energy, and if not installed and used properly—that is, in strict accordance with the manufacturer's instructions—may cause interference to radio and television reception. The Model 2035 has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection from such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If the Model 2035 does cause interference to radio or television reception, which can be determined by disconnecting the RS-232 interface, the user is encouraged to try to correct the interference by one or more of the following measures: moving the computing equipment away from the receiver, re-orienting the receiving antenna and/or plugging the receiving equipment into a different AC outlet (such that the computing equipment and receiver are on different branches).

1.2 CE NOTICE

The CE symbol on your Patton Electronics equipment indicates that it is in compliance with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

1.3 SERVICE

All warranty and non-warranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container. This number may be obtained from Patton Electronics Technical Support: **(301) 975-1007**; **http://www.patton.com**; or, **support@patton.com**.

NOTE: Packages received without an RMA number will not be accepted.

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Model 2035. Technical Support hours: **8AM to 5PM EST, Monday through Friday.**

Thank you for your purchase of this Patton Electronics product. This product has been thoroughly inspected and tested and is warranted for One Year parts and labor. If any questions or problems arise during installation or use of this product, please do not hesitate to contact Patton Electronics Technical Support: **(301) 975-1007**; **http://www.patton.com**; or, **support@patton.com**.

2.1 FEATURES

- Converts parallel data to serial data and vice versa
- Automatic parallel and serial sensing and selection
- Automatic DCE/DTE sensing and selection
- Serial data rates to 115.2 Kbps
- No AC power required
- Supports both software and hardware flow control
- Ultra-miniature size
- A five-state LED monitors status and diagnostics
- Variety of connectors and cable lengths
- Made in USA

2.2 DESCRIPTION

The Patton Model 2035 Parallel to Serial Converters automatically convert RS-232C serial data to parallel data format and vice versa. Incorporating advanced microprocessor technology, the Model 2035 is able to automatically sense and select parallel and serial modes, as well as DTE/DCE modes. The Model 2035 requires no AC power and supports serial data rates to 115.2 Kbps.

For easy configuration, the Model 2035 features a convenient set of configuration switches. The configuration switches allow the user to control baud rate, parity, word length and flow control. An easy-to-read LED indicator displays status and operating condition.

Housed in an ultra-miniature ABS plastic case, the Model 2035 measures only 2.62" x 1.26" x .76". The Patton Model 2035 comes equipped with a DB-25 female connector on the serial side, and a Centronics 36 pin male connector on the parallel side. A six foot cable is built-in. The Model 2035-25M replaces the Centronics 36 pin connector with a DB-25 male connector.

The Model 2035 is simple to install and designed for excellent reliability. The following instructions will help you set up and install the converters properly. If you have any questions, please call Patton Technical Support at (301) 975-1007.

3.1 CONFIGURATION SWITCHES

The Model 2035 uses a set of eight external DIP switches (see Figure 1, below) that allow configuration to a wide range of applications. Because all eight switches are in one externally accessible DIP switch package, there is no need to open the case for configuration. The configuration switches allow you to select data rates, parity, word length and flow control selection. The following section describes all switch locations, positions and functions.

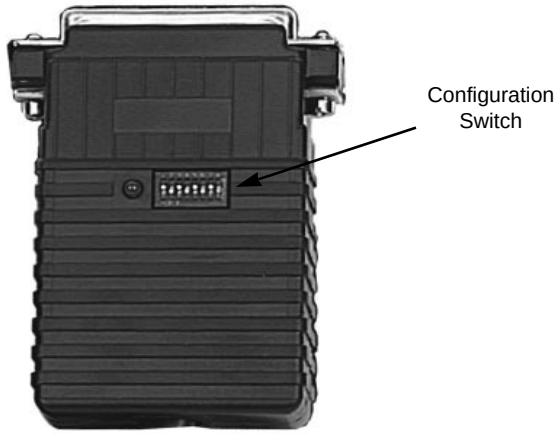


Figure 1. The location of the Model 2035 configuration switches

The Model 2035 uses a *miniature* configuration switch package. To configure your unit, use a small screwdriver and gently push each switch to its proper setting. The ON and OFF positions are shown in Figure 2., below. Default settings for the DIP switches are shown in the table on the following page. Detailed settings follow the table.

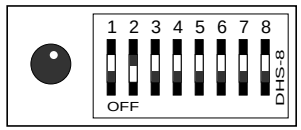


Figure 2. The miniature configuration switch package

DIP SWITCH SUMMARY TABLE			
Position	**Function**	**Factory Default**	
SW1	Flow Control	Off	Hardware
SW2	LED Indicator	On	Enabled
SW3	Data, Parity, Stop Bits	Off	8B, NP, 1S
SW4	Data, Parity, Stop Bits	Off	
SW5	Data, Parity, Stop Bits	Off	
SW6	Data Rate	Off	38400 bps
SW7	Data Rate	Off	
SW8	Data Rate	Off	

3.2 DETAILED SWITCH SETTINGS

This section provides detailed information about the function of each DIP switch and lists all possible settings.

Switch 1: Hardware/Software Control

The setting for Switch 1 determines whether these interface converters will control either hardware or software flow control.

Flow Control	**SW1**
Hardware	OFF
Software	ON

Switch 2: Used to Enable/Disable the LED Indicator

The setting for Switch 2 determines whether the LED indicator is enabled or disabled.

LED	**SW2**
Enabled	ON
Disabled	OFF

Switch 3 through 5: Data, Parity and Stop Bit

Switches 3 through 5 are used to specify the data, parity and stop bits. The following table shows the settings that may be used:

Data	**Parity**	**Stop Bit**	**SW3**	**SW4**	**SW5**
7B	EP	1S	ON	ON	ON
7B	OP	1S	OFF	ON	ON
7B	NP	2S	ON	OFF	ON
7B	EP	2S	OFF	OFF	ON
7B	OP	2S	ON	ON	OFF
8B	EP	1S	OFF	ON	OFF
8B	OP	1S	ON	OFF	OFF
8B	NP	1S	OFF	OFF	OFF

Switches 6 through 8: Frequency and Data Rate

Switches 6 through 8 determine the frequency and data rate. The following chart shows the settings that may be used.

Data Rate	SW6	SW7	SW8
1,200	OFF	OFF	ON
2,400	ON	OFF	ON
4,800	ON	ON	OFF
9,600	OFF	ON	ON
19,200	ON	ON	ON
38,400	OFF	OFF	OFF
57,600	ON	OFF	OFF
115,200	OFF	ON	OFF

4.0 INSTALLATION

The Patton Model 2035 is very simple to install. Once you have configured the DIP switches, just plug it in like a normal cable and you're ready to go. Figure 3 illustrates the proper connections for the standard cables. If you have special-ordered a non-standard connector, your connections may be different.

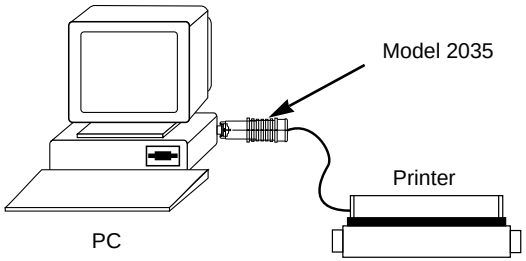


Figure 3. Installing the Model 2035

5.0 OPERATION

Once your interface converter is properly configured and installed, it should operate transparently—as if it were a standard cable connection. Operating power is derived from the RS-232 data and control signals; there is no “ON/OFF” switch.

5.1 LED STATUS MONITORS

The Model 2035 features an easy-to-read status LED that glows red to indicate the condition of the transmission line. Figure 1 shows the location of the LED. The following chart describes the LED's various functions.

LED Codes

● ● – ● —— ● ● – ● ——	Computer is sending data
● —— ● —— ● ——	Serial device is connected; computer is not sending data
● ● —— ● ● ——	Both serial and parallel devices are connected; computer not sending data
● – ● —— ● – ● ——	Printer not ready, data held in buffer
● ● ● ● ——● ● ● ●	Computer ignoring flow control, data lost

The red LED indicator blinks to show data activity. However, since there is only one indicator, it uses different LED codes to demonstrate various messages. The following chart describes these codes:

Key:

●	Blink
–	Short pause
——	Long pause

APPENDIX A

PATTON MODEL 2035 SPECIFICATIONS

Interface:	Asynchronous., RS-232C compatible
Connectors:	Serial, DB-25F; parallel, Centronics 36 pin M
Cables:	Six foot (1.8m) integral cable
Data Rates:	1.2 - 115.2 Kbps
LED:	LED displays status and operating condition
Power Supply:	None required; uses power from RS-232C interface
Data Format:	7 or 8 bits; 1 or 2 stop bits; even, odd or no parity
Temperature Range:	0-60°C (32-140°F)
Altitude:	0-10,100 feet
Humidity:	5 to 95% non-condensing
Dimensions:	2.62" x 1.26" x .76"
Weight:	2 oz. (56.8 grams)

APPENDIX B

PATTON MODEL 2035 INTERFACE CONNECTIONS

36 PIN CENTRONICS PARALLEL PORT CONNECTIONS

Pin	Description	Direction
1	Strobe	Output
2	Data bit 0	} I/O
3	Data bit 1	
4	Data bit 2	
5	Data bit 3	
6	Data bit 4	
7	Data bit 5	
8	Data bit 6	
9	Data bit 7	
10	Acknowledge	Input (active low)
11	Busy	Input (active high)
12	Paper end	
13	Select	
18	+5 volts	
32	Error	
	(16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 33, 36)	} Ground

Note: All other pins are unconnected

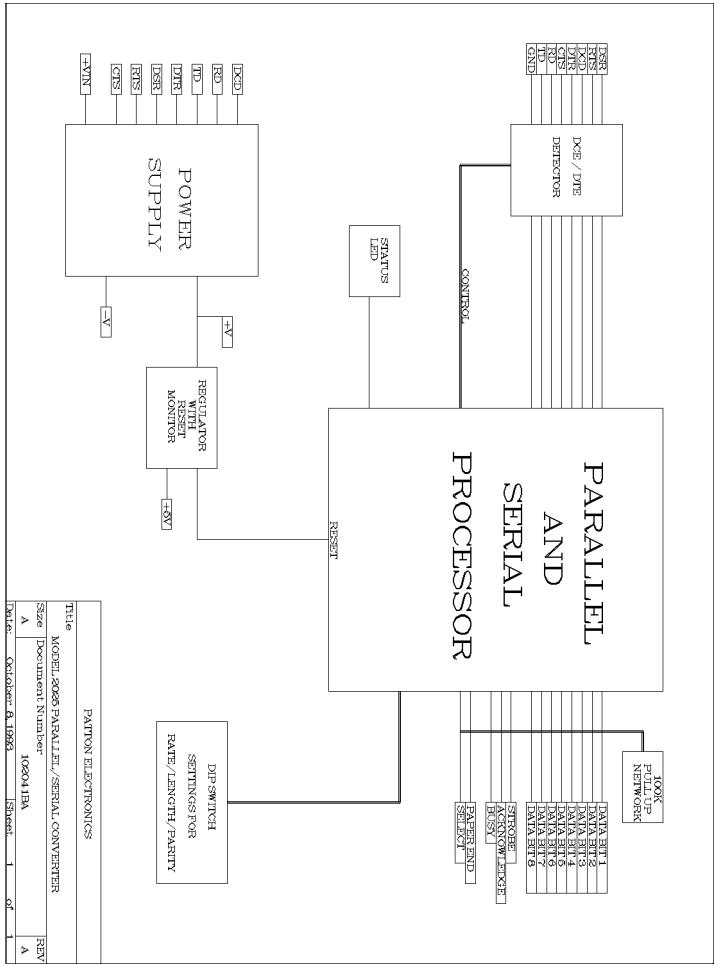
DB-25 SERIAL PORT CONNECTIONS

Pin	Name	Description
1	FG	Connected to pin 7 with optional jumper
2	TXD	Serial Transmit Data; also used as a power source
3	RXD	Serial Receive Data; also used as a power source
4	RTS	Request to Send; also used as a power source
5	CTS	Clear to Send; also used as a power source
6	DSR	Data Set Ready; also used as a power source
7	SG	Signal Ground
8	DCD	Carrier Detect; also used as a power source
9	+V in	Used as a power source
20	DTR	Data Terminal Ready; also used as a power source

Note: All other pins are unconnected

APPENDIX C

PATTON MODEL 2035 BLOCK DIAGRAM



Dear Valued Customer,

Thank you for purchasing Patton Electronics products! We do appreciate your business. I trust that you find this user manual helpful.

We manufacture one of the widest selections of data communications products in the world including CSU/DSU's, network termination units, powered and self-powered short range modems, fiber optic modems, interface converters, baluns, electronic data switches, data-line surge protectors, multiplexers, transceivers, hubs, print servers and much more. We produce these products at our Gaithersburg, MD, USA, facility, and can custom manufacture products for your unique needs.

We would like to hear from you. Please contact us in any of the following ways to tell us how you like this product and how we can meet your product needs today and in the future.

Web:	http://www.patton.com
Sales E-mail:	sales@patton.com
Support E-mail:	support@patton.com
Phone - Sales	(301) 975-1000
Phone - Support	(301) 975-1007
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Mail:	Patton Electronics Company 7622 Rickenbacker Drive Gaithersburg, MD 20879 USA

We are committed to a quality product at a quality price. Patton Electronics is BABT and ISO 9001 certified. We meet and exceed the highest standards in the industry (CE, UL, etc.).

It is our business to serve you. If you are not satisfied with any aspect of this product or the service provided from Patton Electronics or its distributors, please let us know.

Thank you.

Burton A.Patton
Vice President

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